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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,756	12/15/2005	Takatoshi Tsujimura	JP920010371US1	4741

32074 7590 10/05/2007

INTERNATIONAL BUSINESS MACHINES CORPORATION
DEPT. 18G
BLDG. 300-482
2070 ROUTE 52
HOPEWELL JUNCTION, NY 12533

EXAMINER	
ARENA, ANDREW OWENS	
ART UNIT	**PAPER NUMBER**
2811	

MAIL DATE	DELIVERY MODE
10/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/528,756	TSUJIMURA ET AL.	
	Examiner	Art Unit	
	Andrew O. Arena	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,9 and 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,7,9 and 10* is/are rejected.

7)☒ Claim(s) *6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

LYNNE GURLEY
SUPERVISORY PATENT EXAMINER
AU 2811, TC 2800

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The indicated allowability of the subject matter of previously presented claims 4 and 8 is withdrawn in view of reinterpretation of the claim language and reconsideration of the teaching of Yu (US 7,098,060). A new rejection, not necessitated by amendment, is presented below; accordingly, this action is non-final.

Drawings

The drawings are objected to under 37 CFR 1.84(p)(5); they do not include the following reference sign mentioned in the description: 18c (pg 22 ¶2 ln 6). It seems (based on pg 22 ¶3 ln 8-9 and Figs 2 & 4b), that 18c should be used to label the unlabeled vertical rectangles that underlie the rectangles labeled as 22 (Figs 2, 3c, 4b).

The drawings are objected to because the thin horizontal shaded rectangles directly on top of layer 16 in the trenches are not labeled. There is support in the specification (pg 22 ¶3 ln 4-6) that said rectangles are actually cathode 20, but no label.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. See MPEP § 608.02(p).

Specification

The specification is objected to for minor informalities that seem to result in the written description failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR § 1.75(d)(1) and MPEP § 608.01(o).

The recitation "the function layer under a wall..." (claim 1) is an accurate description of the invention and should not be substantially changed (but see below); based on the specification, the "wall" is part of the photoresist (pg 21 ¶4 – pg 22 ¶1 ln 4) while the "lower portions" are actually part of functional layer 16 (pg 22 ¶2). The written description refers to "portions of the wall" (pg 22 ¶2 ln 5-6, last two lines of pg 22, ln pg 26 ¶1 ln 9) but, for consistency with the claim language and to be a more correct description of the invention, should refer to "portions of the function layer under the wall". Such an amendment has support in the original disclosure (e.g., originally filed claim 4; Fig 2; pg 22 ¶2 ln 8-9 with Fig 4b) and will not be regarded as new matter.

Claim Objections

Claims 1-3 are objected to because the recitation "other portions" (clm 1, last ln) is so broad as to raise possible confusion as to the intended meaning and/or scope of the term. See MPEP § 2173.04.

The recitation "a doping concentration in the function layer under a wall forming the trench pattern is lower than in other portions" which raises uncertainty as to the scope of "other portions". Taken on it's face, this language is so broad as to be without bound. Although the specification would lead one to believe that this refers to other portions of the functional layer, limitations from the specification are not read into the claims. See MPEP § 2111.01(II). Therefore, as interpreted for examination purposes, the language "other portions" can be read onto any portion of any part of the device. An appropriate correction is "a doping concentration in portions of the function layer under

a wall forming the trench pattern is lower than in other portions of said function layer" which would seem to properly define the invention supported in the disclosure.

Claims 6 and 9 are objected to under 37 CFR § 1.75(i) because each step of the claim should be separated by a line indentation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 7, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Yu (US 7,098,060).

Re claim 1, Yu discloses an organic light emitting diode device (col 1 ln 11-14), comprising (e.g., Fig 1E):

a substrate (10; col 4 ln 46);

a first electrode (20; col 4 ln 47) formed on the substrate;

an organic electroluminescent function layer (50, 56, 58; col 5 ln 5 & ln 20-24) formed on the substrate;

a trench pattern (col 4 ln 47-49) formed adjacently to the function layer; and

a second electrode layer (60; col 5 ln 25) formed on the function layer and the trench pattern,

wherein a doping concentration in the function layer (50, 56, 58) under a wall (30 extends above 50,56,58, which are therefore under 30; MPEP § 2111) forming the trench pattern is lower than in other portions (reads on wall 30; undoped col 4 ln 53-56).

Re claim 2, Yu discloses the function layer (50, 56, 58) contains any one of polymer and oligomer, each having an amine derivative structure (col 8 lns 11, 16 & 36).

Re claim 3, Yu discloses different types of dopant are contained in areas of the function layer (col 5 ln 5 & ln 20-24), the areas (50, 56, 58) being adjacent to each other while being spaced by a wall (30) of the trench pattern.

Re claim 5, Yu discloses a method for manufacturing an organic light emitting diode device (col 1 ln 11-14), the method comprising the steps of (e.g. Fig 1A-1E):

forming a first electrode (20; col 4 ln 46-47) on a substrate (10);

forming an organic electroluminescent function layer (50, 56, 58; col 5 ln 5 & ln 20-24) and a trench pattern (col 4 ln 47-49) on (MPEP § 2111) the electrode;

performing doping for the function layer by supplying a dopant solution along the trench pattern (col 5 ln 11-16); and

forming a second electrode layer (60; col 5 ln 25) formed on the function layer and the trench pattern.

Re claim 7, Yu discloses introducing, along the trench pattern, at least a second function layer (70) having a composition (col 5 ln 57-64, col 8 ln 58 – col 9 ln 13) different from a composition of the function layer (col 8 ln 10-17).

Re claim 10, Yu discloses the step of performing doping includes the step of supplying different types of dopant into areas of the function layer, the areas being spaced by a wall of the trench pattern (Fig 1C; col 5 ln 12-16)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being obvious in view of Yu.

Re claim 9, Yu discloses the step of performing doping for the function layer by supplying a dopant solution includes the steps of:

supplying the dopant solution along the trench pattern (col 5 ln 12-16); and

dispersing the dopant into the function layer (Fig 1C-1D).

Yu differs from the claimed invention only in not explicitly disclosing the manner by which said dispersing is effected.

However, heating is one of the most well known methods of dispersing, or enhancing the dispersion of, dopants in the art.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made that said dispersing included dispersing by heating the function layer; at least to facilitate the uniform incorporation therein of the dopants.

Allowable Subject Matter

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable subject matter is indicated because the prior art references of record, alone or in combination, do not teach or fairly suggest "forming a photoresist layer on the function layer and patterning the photoresist layer into the trench pattern" in combination with the limitations of claim 5, as required by claim 6.

Response to Arguments

Applicant's arguments filed 04/18/2007 have been considered but are moot in view of the new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yu has not been relied upon for a teaching of the limitation in the last two lines of claim 1 as disclosed in the specification but not clearly claimed, since to do so would be to improperly read limitations from the specification into the claims. However, Yu teaches the disclosed limitations in that layers 56 and 58 are additionally doped in relation to layer 50 (col 5 ln 1-24).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew O. Arena whose telephone number is 571-272-5976. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne A. Gurley can be reached on 571- 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew O. Arena
27 September 2007

LYNNE GURLEY
SUPERVISORY PATENT EXAMINER
AU 2811, TC 2800